

REMARKS

The Examiner is thanked for the careful examination of the application. However, in view of the following remarks, the Examiner is respectfully requested to reconsider and withdraw the outstanding rejections.

The present invention relates to a memory board and an image forming apparatus comprising a memory board. One of the objects of the present invention is to enable the memory board to be used with a variety of main apparatus. According to paragraphs [0003] – [0009] of the present application, in the prior art, the memory controllers were either a part of the main apparatus or included a switch that had to be adjusted on the memory board. The present invention improves the prior art by providing a memory board, or image forming apparatus comprising such a memory board, wherein the memory board includes a printed wiring board having a connector terminal, and the printed wiring board is adapted to be used by an apparatus to which the printed wiring board is to be attached. The printed wiring board includes a memory device mounted on the printed wiring board and a memory controller mounted directed on the printed wiring board for converting a control signal from the apparatus into a control signal suitable for access methods specific to the memory device. As such, the memory board can be used with different apparatus without requiring a user to operate a switch on the memory board. As set forth in paragraph [0010] of the present application, it is an object of the present invention lighten the load on the main unit, i.e., apparatus, to which the memory board is connected.

Claims 1-14 have been rejected under 35 U.S.C. §103(a) as being unpatentable over *Ho* in view of U.S. Patent No. 6,114,751, hereinafter

Kumakura et al. The Examiner relies upon *Ho* for an alleged teaching of a memory board comprising a printed wiring board having a connector terminal and a memory device mounted on the printed wiring board. However, as now amended, it is clear that the connector terminal is used to connect the printed wiring board to the apparatus. The Examiner refers to col. 3, lines 29 – 34, for a description of the connector. However, that section refers to a connector for connecting the memory modules 12A,B to the module sockets 14,B. It does not teach or suggest connectors for connecting the printed wiring board (that includes a memory device and a memory controller) to an apparatus.

Furthermore, the Examiner acknowledges that *Ho* does not disclose a memory controller mounted directly on the printed wiring board. To overcome this deficiency, the Examiner relies upon *Kumakura et al.* and alleges that *Kumakura et al.* discloses a memory controller mounted directly on the printed wiring board. The Examiner refers to Figure 25 and column 19, lines 42-47 of *Kumakura et al.* However, the embodiment of *Kumakura et al.* relied upon by the Examiner includes a printed circuit board 41 that includes not only the memories 40 and the memory controller 43, but also the microprocessor (MPU) 42. Thus, *Kumakura et al.* teaches a board having not only the main microprocessor on it, but also the memories and the memory controller. *Kumakura et al.* does not teach or suggest separating the memories 40 and the memory controller 43 from the MPU 42. Accordingly, the embodiment of *Kumakura et al.* relied upon by the Examiner does not teach or suggest a

separate memory board that includes a connector terminal so that the memory board can be connected to an apparatus which uses the memory device.

The printed circuit board 41 disclosed by Kumakura does not have connectors for enabling the board to be attached to an apparatus. Compare Figure 25 of Kumakura to Figures 4A and 5A of Kumakura. Thus, the Kumakura printed circuit board 41 is intended to be mounted in a stationary manner in an apparatus like Ho. Accordingly, neither reference teaches or suggest the combination according to the present claims which includes a connector for enabling the printed circuit board to be detachable.

And, none of the references relied upon by the Examiner teaches or suggests a memory board having a memory device and a memory controller mounted directly thereon which is adapted to be connected to another apparatus which utilizes the memory device. Accordingly, the prior art relied upon by the Examiner does not teach or suggest the present invention as now set forth in the claims 1-14.

In view of the foregoing remarks, the Examiner is respectfully urged to reconsider and withdraw the outstanding rejections.

In the event that there are any questions concerning this Response, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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